

1 What is claimed is:

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3 1. An intake system for an internal combustion engine, comprising:

4 an intake manifold of the internal combustion engine adapted to receiving an air intake system
5 in alignment with one or more air intake port openings in a mounting surface of the intake manifold;
6 and

7 an air intake system having a forwardly disposed air inlet and a plurality of air passages
8 leading from the air inlet toward the one or more air intake openings in the intake manifold;
9 wherein the distribution of air to all parts of the air inlet of the intake manifold is substantially
10 uniform; and

11 wherein each air passage in the air intake system has a decreasing cross-sectional area along
12 the direction of air flow.

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14 2. The intake system of claim 1, wherein each of the separate air passages conveys a
15 substantially equal volume of air therethrough.

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17 3. The intake system of claim 1, wherein the internal combustion engine includes a
18 supercharger installed between the air intake system and the intake manifold of the engine, the
19 supercharger having one or more air intake port openings in a mounting surface for receiving the air
20 intake system.

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22 4. The intake system of Claim 1, wherein the air intake system comprises:

23 a body portion including the air passages;

24 an air inlet housing attached to an inlet end of the body portion and including one or more air
25 valves actuated by an actuating linkage to control air flow respectively into the plurality of air
26 passages; and

27 a base attached to an outlet end of the body portion for coupling an output port associated
28 with each air passage into the intake manifold of the internal combustion engine.

1 5. The intake system of Claim 4, wherein the air intake system further comprises:

2 at least one fuel nozzle coupled through the base near the output port of each of the plurality
3 of air passages for introducing fuel into an air stream emitting from each output port of each air
4 passage.

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6 6. The intake system of Claim 5, wherein the air intake system further comprises:

7 a fuel distribution network for supplying fuel to the at least one fuel nozzle corresponding to
8 each air passage, wherein the supply of fuel to the nozzles is provided in cooperation with the
9 actuation of the air valves for admitting air to be mixed with fuel as it is introduced into the internal
10 combustion engine.

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12 7. The intake system of Claim 4, wherein the body, air inlet housing and base are all
13 fabricated as a single assembly.

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15 8. The intake system of Claim 4, wherein the body, air inlet housing and base are cast as one
16 piece.

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18 9. The intake system of claim 4, wherein the air valve is a butterfly-type valve.

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20 10. The intake system of claim 4, wherein the air inlets to the plurality of separate air
21 passages are disposed one above the other at the air inlet housing.

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23 11. The intake system of claim 4, wherein the air inlets to at least two of the plurality of
24 separate air passages are disposed side-by-side at the air inlet housing to provide a lower profile.